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INSTRUCTION MANUAL

FLOAT TYPE LEVEL TRANSMITTER

HT-100R Series



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Overview

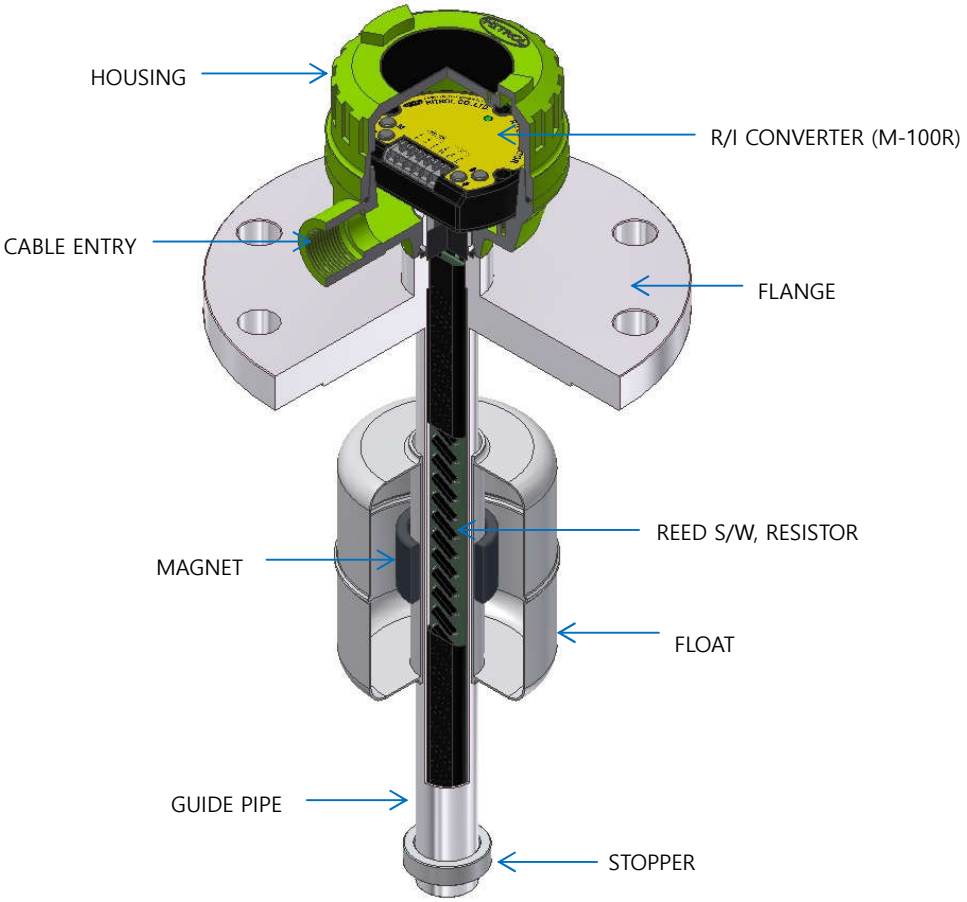
HT-100R(-Ex) Series are FLOAT TYPE LEVEL TRANSMITTER that continuously measure water levels in containers using buoyancy. These transmitters can be easily installed and adjusted and can be used for chemicals because PVC and Teflon are used on their detecting elements. These transmitters are mainly used to measure clean water, industrial water, and liquids in LPG tanks and chemical tanks.

Characteristics

- Widely used to measure various liquids (Resolution 10mm)
- Applicable to corrosive and acidic liquids with anti-corrosive material for the sensor (PVC, Teflon)
- Applicable to explosion area (Ex-proof Version)
- Local indication is available. (Display Type)
- Strong structure and high reliability

Operating Principles and Appearance

As the FLOAT made to fit the specific gravity of the measure object moves up and down along with the liquid surface by buoyancy, the magnet installed in the FLOAT operates the REED S/W in the GUIDE PIPE to change the resistance values connected to the REED S/W. The changed resistance values are detected by the R/I CONVERTER (M-100R) inside the HOUSING to continuously output current values (DC 4~20 mA) that fit the resistance values.



NOTICE **Product images are for reference only.**

Specifications

STAINLESS STEEL

Model	HT-100RS	HT-100RSH	HT-100RS-Ex	HT-100RSH-Ex
Mounting	Flange			
Process Temperature	Max. 80℃	Max. 150℃	Max. 80℃	Max. 150℃
Process Pressure	Up to 20kg/cm2(300#)			
Power Source	DC +24V			
Output	DC 4~20mA(2-wire)			
Enclosure	Weather-Proof (IP65) Opt. PF 1/2" IP66		Ex-Proof (Ex d IIC T6) Opt. PF 1/2" IP 66	Ex-Proof (Ex d IIC T4) Opt. PF 1/2" IP 66
Wetted Part Material	SUS316L			
Process Connection	100A JIS 10K			
Housing	ABS, AL(Opt.)	AL.		
Cable Entry	PF 3/4"(F), Adaptor (PF 1/2", NPT 3/4"...)			
Resolution	10mm			

PVC

Model	HT-100RV	HT-100RV-Ex
Mounting	Flange	
Process Temperature	Max. 60℃	
Process Pressure	Up to 0.5kg/cm2	
Power Source	DC +24V	
Output	DC 4~20mA(2-wire)	
Enclosure	Weather-Proof (IP65) Opt. PF 1/2" IP66	Ex-Proof (Ex d IIC T6) Opt. PF 1/2" IP66
Wetted Part Material	PVC	
Process Connection	100A JIS 10K FF	
Housing	ABS, AL.(Opt.)	AL.
Cable Entry	PF 3/4"(F), Adaptor (PF 1/2", NPT 3/4"...)	
Resolution	10mm	

TEFLON

Model	HT-100RT	HT-100RTH	HT-100RT-Ex	HT-100RTH-Ex
Mounting	Flange			
Process Temperature	Max. 80℃	Max. 150℃	Max. 80℃	Max. 150℃
Process Pressure	Up to 0.5~3kg/cm2			
Power Source	DC +24V			
Output	DC 4~20mA(2-wire)			
Enclosure	Weather-Proof (IP65) Opt. PF 1/2" IP66		Ex-Proof (Ex d IIC T6) Opt. PF 1/2" IP 66	Ex-Proof (Ex d IIC T4) Opt. PF 1/2" IP 66
Wetted Part Material	SUS316L+TEFLON			
Process Connection	100A JIS 10K			
Housing	ABS, AL(Opt.)	AL.		
Cable Entry	PF 3/4"(F), Adaptor (PF 1/2", NPT 3/4"...)			
Resolution	±10mm			

Float

Application

Float	Environment						
	Temperature (℃)	Pressure (kg/㎠)	Acid	Alkaline	Oil	Solvent	Liquid gas
SUS 316L	-40 ~ +150	Up to 20	△	○	○	◎	△
PVC	-10 ~ +60	0.5	○	○	X	△	X
TEFLON	-20 ~ +150	0.5~3	◎	◎	X	○	△
NBR	-40 ~ +60	Up to 20	X	△	◎	△	○
TITANIUM	-20 ~ +150	Up to 10	X	△	◎	○	○

N

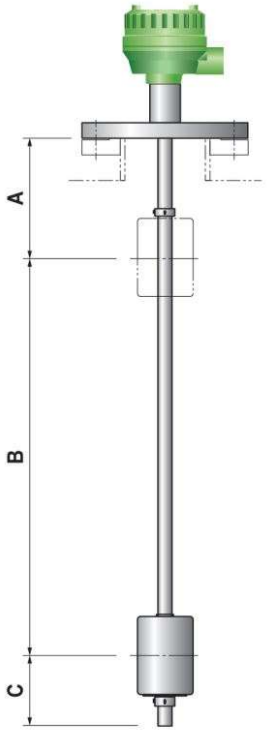
ote: ◎ = Excellent ○ = Good △ = Acceptable X = Not good

NOTICE **Above application can be different according to the specific gravity and the specific medium**

M-100R

Item	Specifications	
Microprocessor	16Bit Microprocessor	
Current Loop Interface	2-Wire Loop Current	
Supply Voltage	DC +17V ~ +40V @ Typ.+24V	
Operating Voltage	+3.3V	
Output Current Accuracy	3.8mA ~ 20.5mA @ ±0.2% F.S	
Output Current Range	3.8mA ~ 20.5mA @ Alarm 3.6mA, 21mA [NAMUR NE43]	
Output Current Offset	■ Zero: 3.9 ~ 4.1mA ■ Span: 19.9 ~ 20.1mA	±0.1mA @ 0.01mA Step
Frame Ground	FG	
Damping Time	0.5 sec @ Fixed	
Self-Diagnosis	■ Missing the float from sensor ■ Disconnected Sensor Cable ■ Lower than Zero Position	3.6mA Current Out
	■ Higher than Span Position	21mA Current Out
Simulation Current Out	■ 4mA @ 5 sec ■ 12mA @ 5 sec ■ 20mA @ 5 sec	
Status Indicator	Tri-Color LED (Green/Red/Orange)	
Zero / Span Set	Tact Switch	
Wire Connection	One-Touch Connector	AWG 16 ~ 26
Ambient Temperature	-40℃ ~ +85℃	
Dimension	80mm x 65mm x 20mm	
Weight	54g	

Section Distance



Section	Distance(mm)		
	2"	3"	4"
A	50 (SUS, TEFLON) 100 (PVC)	100	100
B	250~5000(*)		
C	50 (SUS) 70 (TEFLON) 80 (PVC)	100	100

A = Upper Dead Band; Minimum length which cannot be measured from the bottom of flange

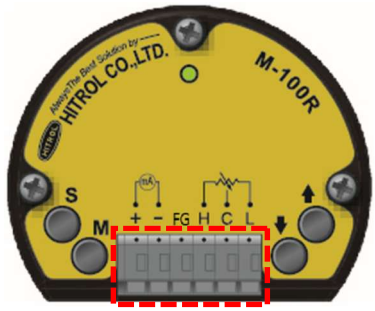
B = Measuring Range; It can be different according to the material.

C = Lower Dead Band; Minimum length which cannot be measured from the end of guide pipe.

(*) = If the measuring range is below than 600mm, the accuracy can be lower than described and it can't warranty against accuracy.

Wiring

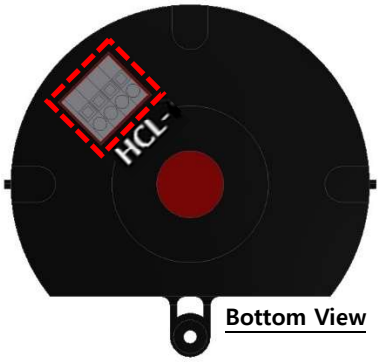
M-100R



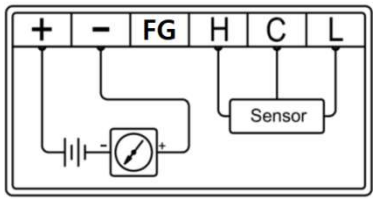
M-100RD



Top View



Bottom View



■ + -: DC 24V(DC 4~20mA Loop)

■ FG: Frame Ground

■ H, C, L: Terminals between Sensor and M-100R

* Cable Color: H – Red, C – White, L – Black

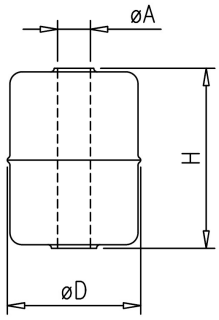
■ Make sure to connect the power with correct polarity (+, −).

■ The power supply must be between DC +17 and +40V.

■ Do not connect the wire with the power connected.

Float Application

Table



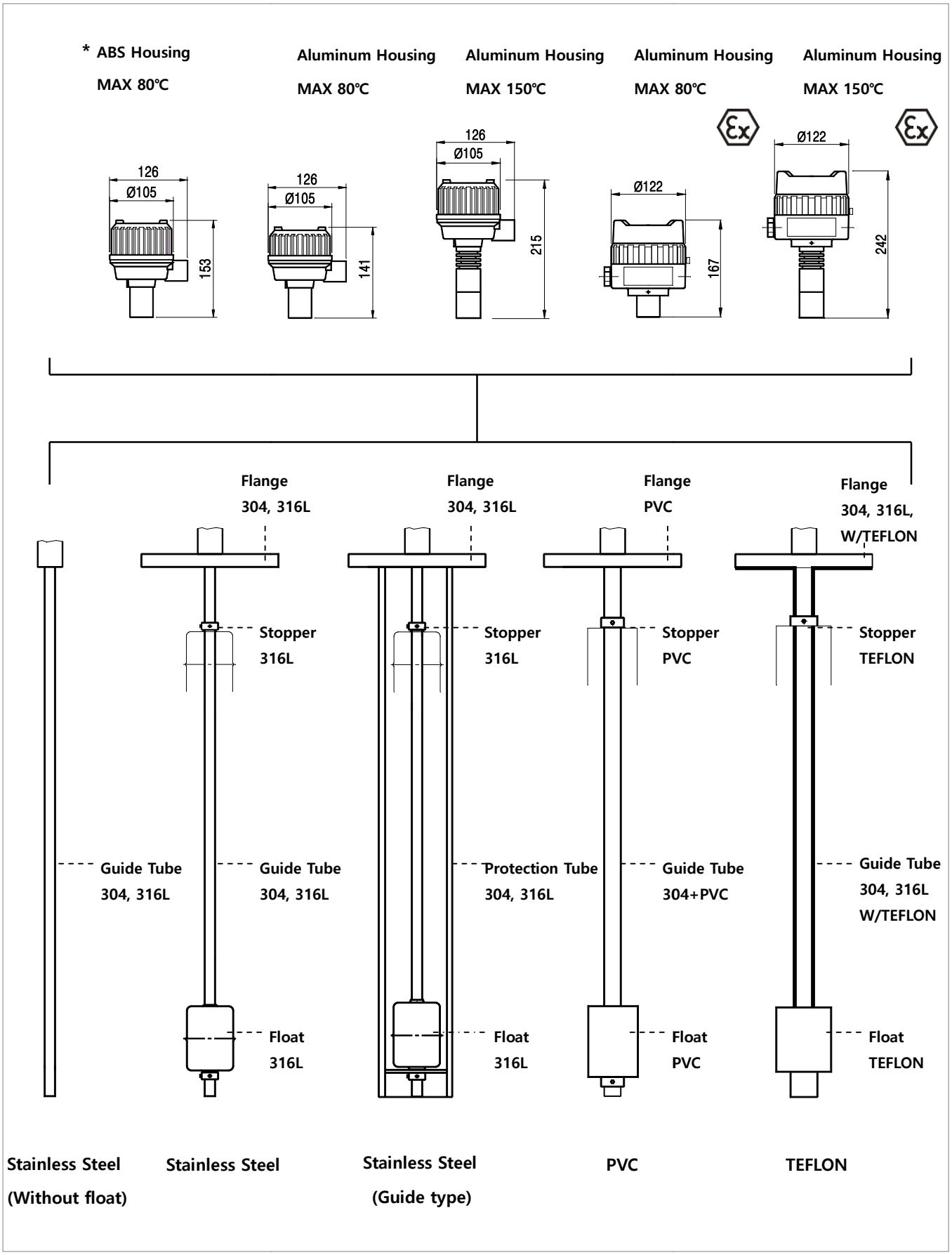
Product	Size	Dimensions (mm)			Guide Tube	Material	S.G Range
		D	H	A			
HT-100RS	2"	Φ49	50	Φ15.5	Φ12.7	316L	0.7~1.0
		Φ50	45	Φ20	Φ15.8	NBR	0.6~0.9
		Φ42	50	Φ15	Φ12.7	316L	0.8~1.3
	3"	Φ73	105	Φ23.5	Φ21.7	316L	1.0~1.5
		Φ73	108	Φ23	Φ21.7	Titanium	0.6~0.9
		Φ65	90	Φ25	Φ21.7	316L	0.9~1.5
	4"	Φ95	119	Φ30	Φ25.4	316L	0.8~1.3
		Φ95	103	Φ23	Φ21.7	Titanium	0.6~0.8
		Φ95	118	Φ23	Φ21.7	Titanium	0.5~0.6
		Φ80	80	Φ28	Φ25.4	NBR	0.5~0.7

Product	Size	Dimensions (mm)			Guide Tube	Material	S.G Range
		D	H	A			
HT-100RV	2"	Φ49	60	Φ20	Φ18	PVC	1.0~1.6
	3"	Φ76	110	Φ31.5	Φ26		
	4"						

Product	Size	Dimensions (mm)			Guide Tube	Material	S.G Range
		D	H	A			
HT-100RT	2"	Φ45	50	Φ17	Φ15	TEFLON	0.9~1.6
							1.1~1.7
	3"&4"	Φ69	96	Φ23.5	Φ21		0.8~1.3
							0.9~1.5
	4"	Φ85	100	Φ33	Φ28		1.1~1.7

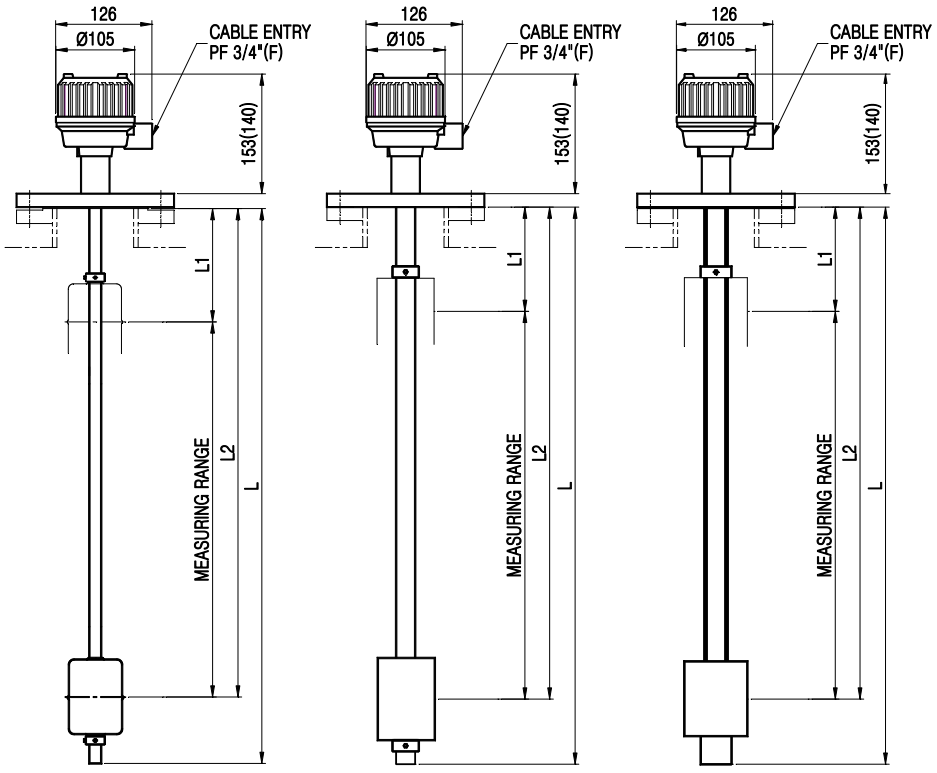
(*)S.G: Specific Gravity

Product Composition

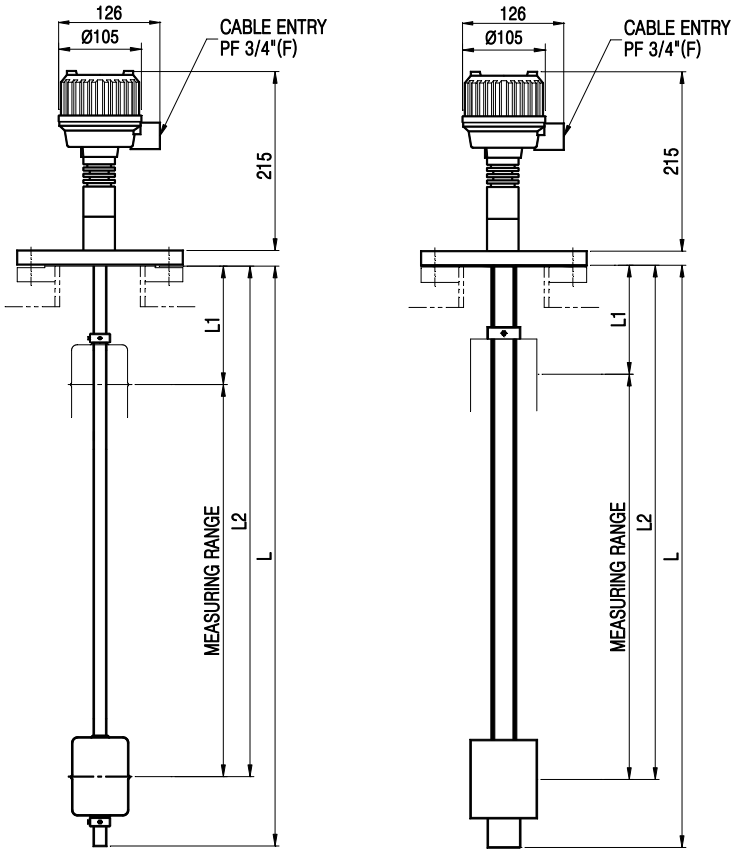


*** PVC Type's workable temperature is Max 60℃**

Dimensions <WEATHER-PROOF Version>

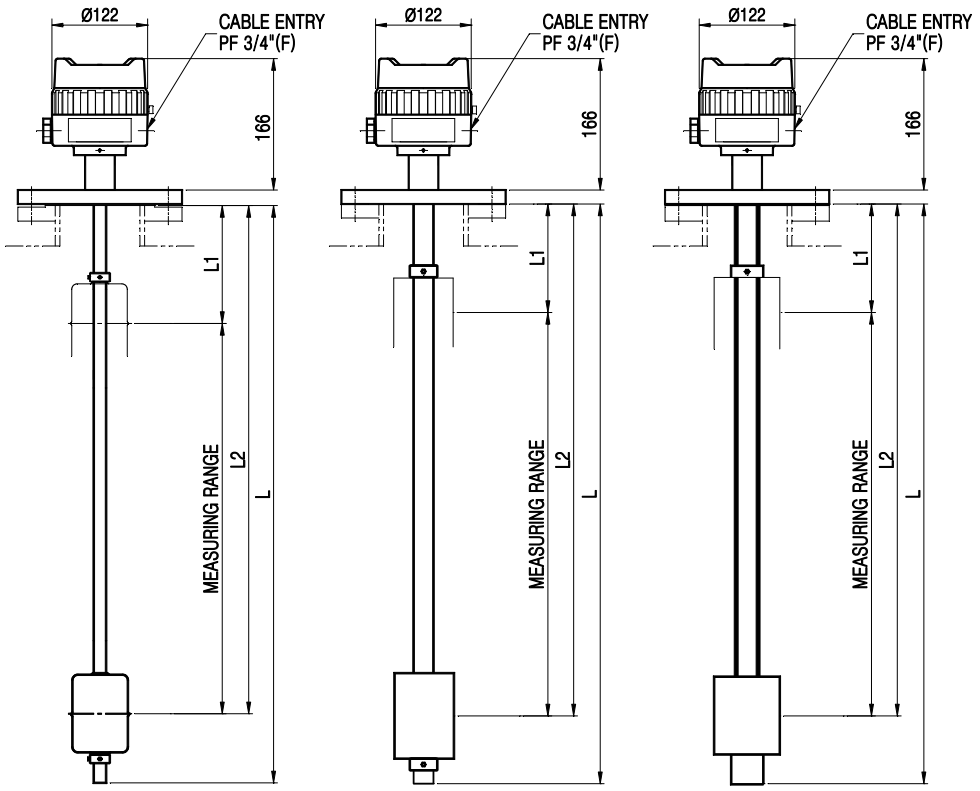


HT-100RS **HT-100RV** **HT-100RT**

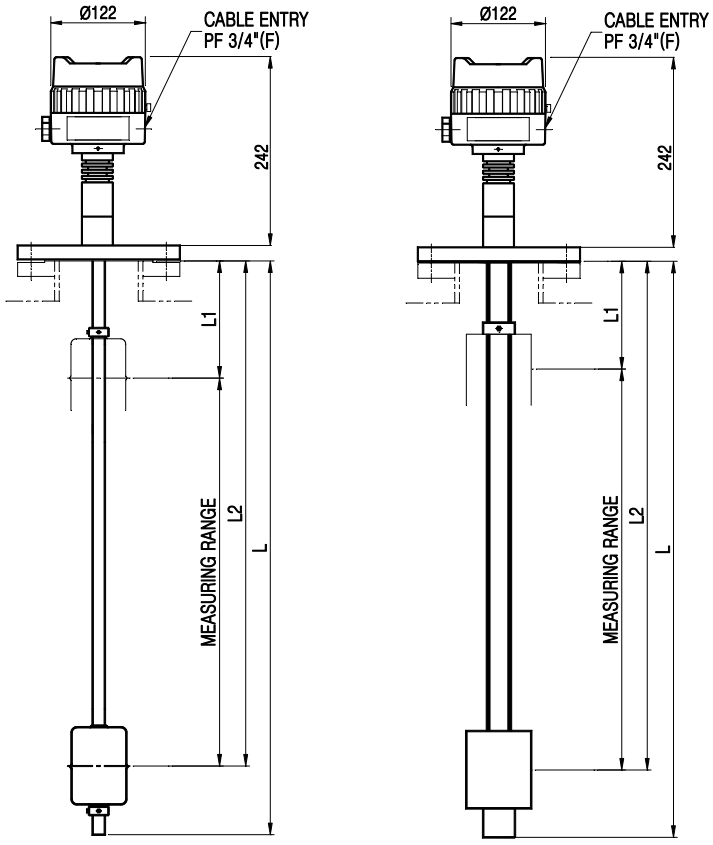


HT-100RSH **HT-100RTH**

<Ex-PROOF Version>

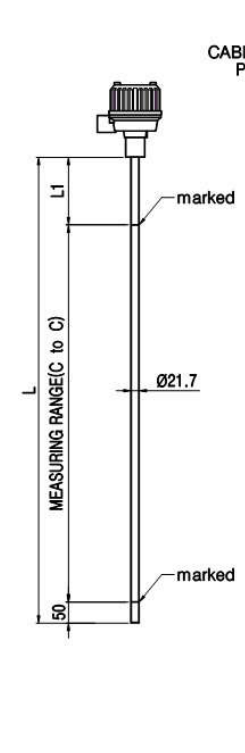


HT-100RS-Ex **HT-100RV-Ex** **HT-100RT-Ex**

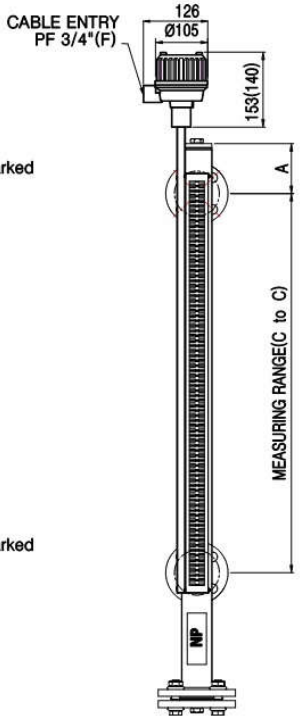


HT-100RSH-Ex **HT-100RTH-Ex**

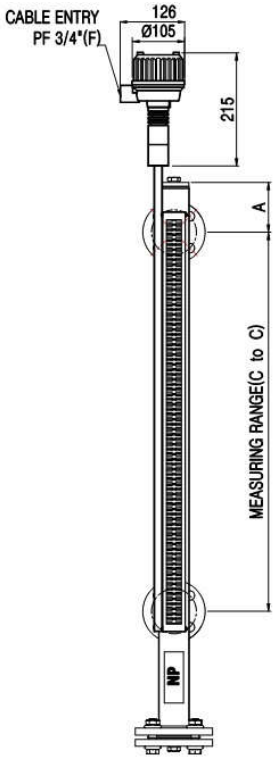
FLAP TYPE LEVEL GAUGE with HT-100R Series



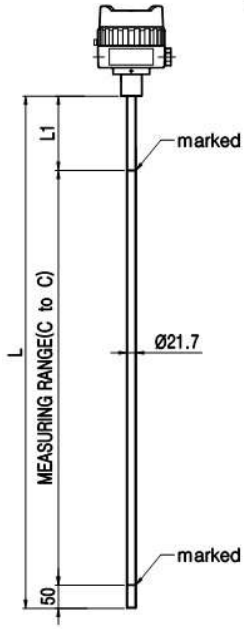
HT-100R



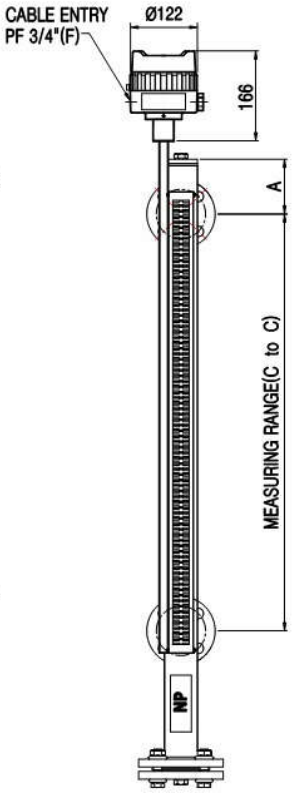
HT-100R+HLG-100F



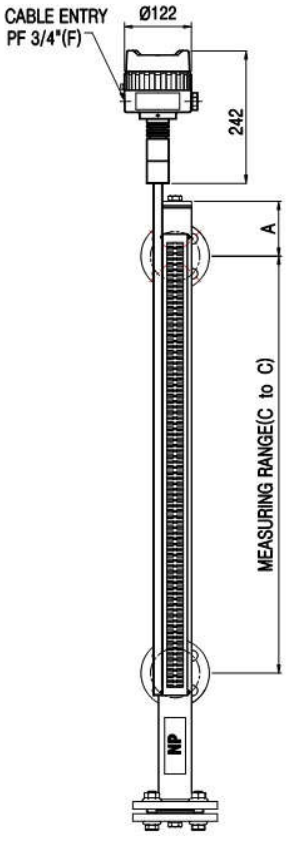
HT-100RH+HLG-100F



HT-100R-Ex



HT-100R-Ex+HLG-100F



HT-100RH-Ex+HLG-100F

NOTICE

VENT PLUG : L1= A+30mm

VENT VALVE /w PLUG : L1= A+100mm

Maintenance

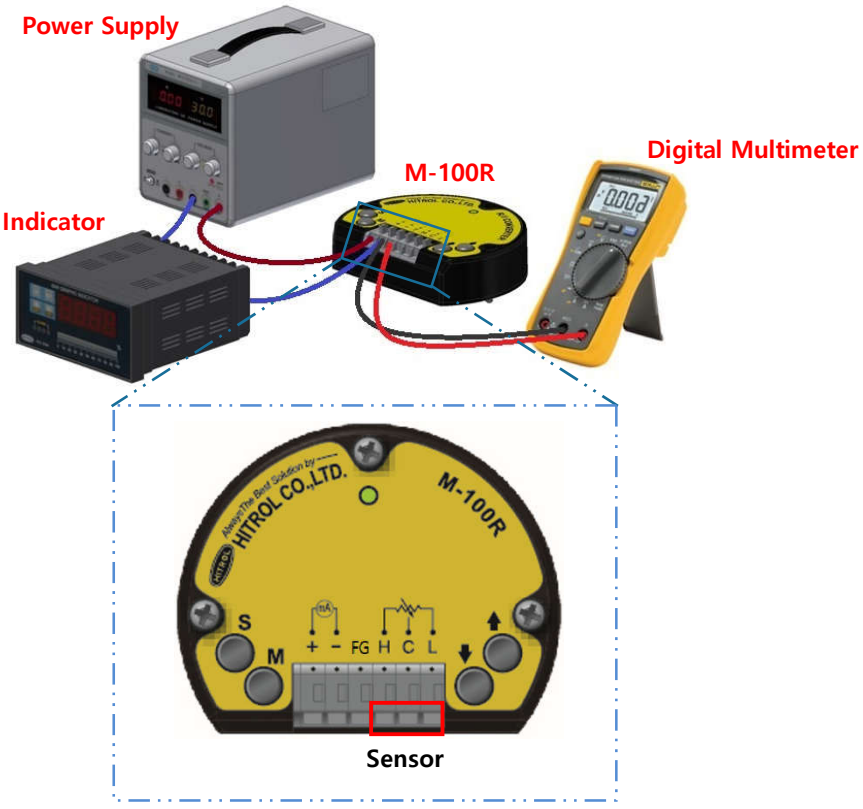
The major parts of the HT-100R(-Ex) Series level transmitters to be inspected are divided into the sensor element and the transmission element. The sensor element consists of Reed Switch, Resistors, and the Float, and the transmission element is the M-100R(R/I CONVERTER). The life spans of major parts vary with user environments and can be used in optimum conditions through periodic inspections. Therefore, the user should maintain and repair the product through periodic inspections conducted at least once a year. The appearance of the product should be visually checked to see if there is any damage, and if there is scale caused by measure objects, it should be removed for the smooth operation of the float.

■ Sensor Element Inspection

Separate the sensor lines connected to the M-100R's terminals H, C, and L, and measure the resistance value from the sensors.

- Low and Com: resistance value of the current level
- High and Com: entire levels' resistance value – current level's resistance value
- High and Low: entire levels' resistance value

CAUTION **After checking the sensor parts, the wrong connection of H, C, and L is the cause of the product failure.**



Precautions for Removal

- Check the level and presence of measurements in the tank before removing it.
- Wear gloves when removing it, to prevent a burn.
- Disassemble work shall be done with the power off.
- If there is explosive gas atmosphere, do not open the cover.
- Unlock the lock key (Set screw) before removing the cover. (Ex-proof)
- Make sure that any O-ring or gasket is not damaged while opening or closing the cover of product.

Precautions for Installation

- Use the same standard flange or screw.
- Make sure to insert washers between bolts and nuts to prevent loosening.
- When you attach the product to a hopper, make sure that it is as bonded as possible by means of tools.
- Make sure to insert gaskets between flanges. (Select the gaskets in consideration of temperature of content and pressure of vessel.)
- Install an Ex-proof product only in an Ex-proof zone.
- After the installation is complete and the cover of the product is assembled, power it on.



Please do not apply high impact to the product.



If you twist the head to install product, it may cause product defects, so you must hold the connector to install it.

Precautions for External Wiring (Ex-proof)

- Use the cable gland connection or metal pipe line lead-in on the wire inlet, and use a product with equivalent Ex-proof certificate to connect it with the external line lead-in method.
- For non-use external wire inlet, use a closed plug that passes safety certificate above equivalent performance with the product.

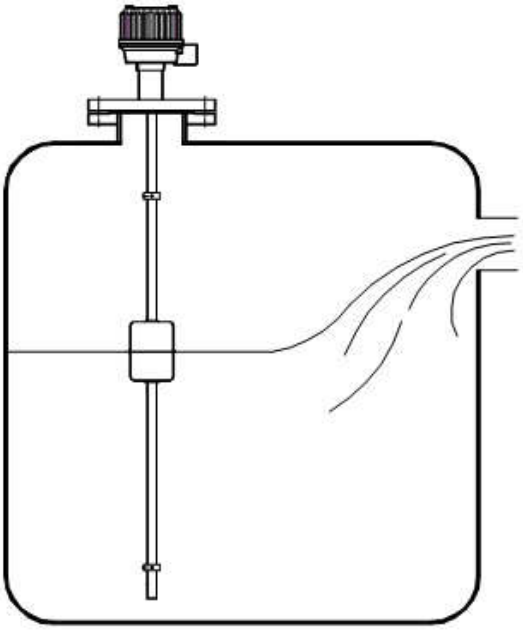
Precautions for Grounding (Ex-proof)

- The grounding has an external and an internal grounding. When connecting to an external ground, the ground wire shall be 4㎟ (4mmSQ).
- The internal grounding wire shall be the same size as the power line, and the size of the internal grounding terminal lug shall be 3.1㎟ (3.1mmSQ). If the power line is larger than 3.1㎟, connect the ground wire without terminal lug.

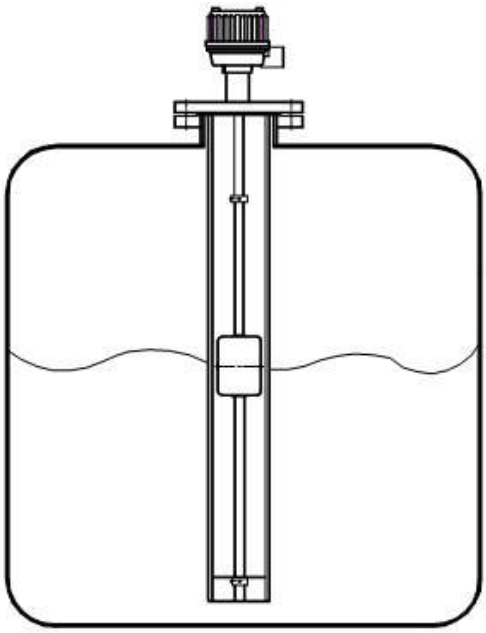


Make sure to insert a washer if the terminal lug is removed from ground terminal and then re- connected. (Loosening prevention)

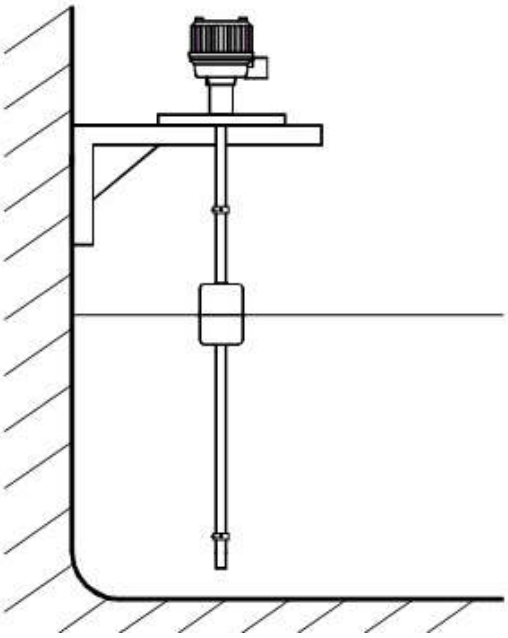
Installation Below recommendation shall be considered when installation.



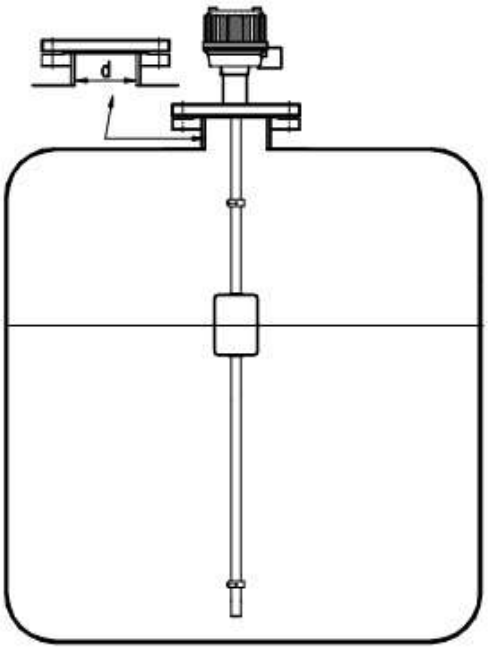
The product may malfunction if the product has been installed at the inlet through which the measure object flows in. Therefore, a guide should be installed in such case or the product should be installed at a position distant from the inlet for measure objects.



When there is flow or sloshing in the measured object or there is agitator around the sensor, the protective tube type must be used.



When installing the product on a concrete wall, you may want to install it as shown in the figure above.



Inner diameter "d" of tank nozzle shall be larger than the outer diameter of float as per above figure.

Safety and Environment

■ Precautions for Use

- Make sure to connect the product and vessel using required tools for sure.
- Keep the lock key safe and make sure that it is locked.
- Do not apply high impact to the product.

■ Precautions for Wiring

- Make sure to wire contacts correctly (refer to *Wiring*)

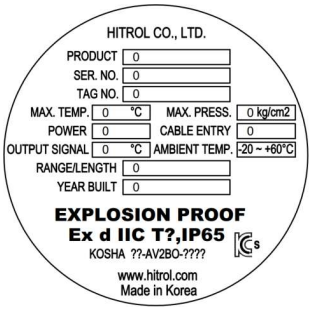
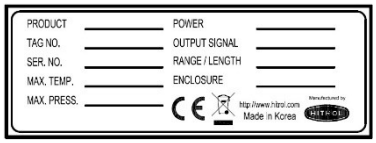
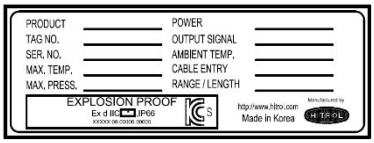
■ Disposal of Product

- Make sure to separate the amplifier and main unit from housing before disposing the products. Also, the amplifier shall be detached and discard the metal and non-metallic materials. No part (ex. Mercury switch) has influence on the environment, so no special attention is required.

Marking

■ Product Identification

The product identification mark is attached onto the housing and shows the model name, serial number, working temperature, working pressure, and matters regarding output. The serial number is a unique manufacturing number for the identification of products.

	Weather-Proof	Explosion-Proof
Non-Display Type		
Display Type		

■ KC Certified

This is a commercial (grade A) electromagnetic compatible device that the seller or the user should be aware of and is intended to be used outside the home.



User Training

The above matters should be fully understood, and the temperature of fluids in the container where the product is used shall not exceed 80℃ in the case of general types and 150℃ in the case of high-temperature types. In addition, make sure that the ambient temperature of housing is kept at -20℃ ~ +60℃. (However, product with PVC sensor part, the fluid temperature of the container is limited to 60℃.)

An Ex-proof product is a pressure-resistant and Ex-proof type, so never open the cover during operation. Ex-proof products are designed according to Article 34 of the Industrial Safety and Health Act and Article 58.4 of the Enforcement Rules of the same Act.



Do not apply the Non Ex-proof product in an Ex-proof zone.

The Ex-proof product can be used where the environment and liquid inside the containers are of zone 1 and 2

Failure Mode & Actions

When the output current is below 4mA,

Cause	Checked
Calibration error	Recalibrate
The DC24V power supply line has not been connected.	Check the power supply line and reconnect
The FLOAT Stopper below the sensor has been loosened.	Reassemble or replace the Stopper
The sensor FLOAT lost buoyancy or has been damaged.	Replace FLOAT
The HIGH cable of the sensor has been opened.	Reconnect
The M-100R inter element has been damaged.	Replace the M-100R
When the resistor of the sensor has been burnt and opened and the FLOAT is located below the resistor.	Replace the sensor Module

When the output current is above 20mA,

Cause	Checked
Calibration error	Recalibrate
The Float Stopper above the sensor has been loosened.	Reassemble or replace the Stopper
The LOW cable of the sensor has been opened.	Reconnect
The M-100R inter-element has been damaged.	Replace the M-100R
When the resistor of the sensor has been burnt and opened, and the float is located above the resistor.	Replace the sensor PCB

Output current holding phenomenon

Cause	Checked
When the buoyancy has been lost because of impurities between the FLOAT of the sensor and the pipe	Clean the pipe and the FLOAT
When the sensor resistor has been burnt intensively and massively, thereby causing short circuit, and the FLOAT is located in that position	Replace the sensor PCB (The output drastically rises or drops when the FLOAT goes out of the position. Measurement errors occur.)
When the sensor resistor has been burnt intensively and massively and opened, and the FLOAT is located in that position	Replace the sensor PCB (The output drastically rises or drops when the FLOAT goes out of the position. Measurement errors occur.)

Output hunting phenomenon

Cause	Checked
In the process for the inter-element (diode) of the M-100R to be damaged, temporary over-measurement (approximately 10%) caused by over current and noise outputs are formed.	Replace the M-100R

Warranty and Contact

■ Warranty and Service

This product is subject to the warranty for 2 years of shipment and unpaid service will be provided for any damage found under normal operating conditions. If it is not about the failure of product, the service charge will be payable.

You can request A/S at our website or by contacting our headquarters.

NOTICE **PTFE Float and Tube have a warranty period of one year after the product is shipped.**

■ Headquarters . Factory . Laboratory Contact Number

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APPENDIX M

M-100RD

User Manual

Float Type Level Transmitter



Doc. no.: Rev.0.6

Issue date: 2026.06.05

Version : 26F04~

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1. M-100RD Configuration & Function



No.	Configuration	Function
1	**S Key**	■ Function setting ■ Save the setting
2	**M Key**	■ Mode change ■ Cancellation
3	**▲ Key**	■ Span Set ■ Setting the value left & up
4	**▼ Key**	■ Zero Set ■ Setting the value right & down
5	**LCD**	■ Display of operating and setting status
6	**LED**	■ Display of power and status
7	**PWR**	■ For supply power and current output ■ Check for output current

2. Specifications

Items	Specifications	
Model	M-100RD (Compact), M-RIU (Local)	
Microprocessor	16Bit Microprocessor	
Current Loop Interface	2-Wire Loop Current	
Supply Voltage	DC+17V ~ +40V @ Typ.+24V	
Output Current Accuracy	4.0mA ~ 20.0mA @ ±0.2% F.S	
Resolution	±10mm @ With Sensor	
Output Current Range	■ 3.8mA ~ 20.5mA @ Alarm 3.6mA, 21mA [NAMUR NE43]	
	■ 4.0mA ~ 20.0mA @ NAMUR NE43 Holding	
Output Current Offset	■ Zero: 3.9 ~ 4.1mA	±0.1mA @ 0.01mA Step
	■ Span: 19.9 ~ 20.1mA	
Measurement Sensor Range	■ Min. : 200Ω [100mm]	
	■ Max. : 12KΩ [6M) @ 20Ω Sensor	
Output Current Definite	TP	
Damping Time	■ Default 0.5 sec	
	■ Range: 0 sec ~ 10 sec @ 0.5 sec Step ADJ.	
Self-Diagnosis	■ Missing the float from sensor	3.6mA current out
	■ Disconnected Sensor Cable	
	■ Lower than Zero Position	3.6mA current output [NAMUR NE43]
	■ Higher than Span Position	21mA current output [NAMUR NE43]
Simulation Current Out	■ 4mA @ 5 sec	
	■ 12mA @ 5 sec	
	■ 20mA @ 5 sec	
Status Indicator	Bi-Color LED [Green / Red / Orange]	
Setting Menu	Quick Menu / Set Menu / UART	
Display	mA, %, m, ft, Level, Distance	
Ambient Temperature	-20℃ ~ +60℃	

[Table 1] Specifications

3. Configuration of Setting Menu

No.	Content	Description	Remarks
[00]	Select Unit : mA / %	▲ : mA ▼ : % (※ Unit Setting for [02], [03])	
[01]	Select Level / Distance	▲ : Level ▼ : Distance	Quick Menu
[02]	Zero Setting	Setting 0.0% ~ 95.0% or 4.000 mA ~ 19.200 mA (Float : Zero position)	Quick Menu
[03]	Span Setting	Setting Span 5.0% ~ 100.0% or 4.800 mA ~ 20.000 mA (Float : Span position)	Quick Menu
[04]	Zero Height Setting	Based on the setting of level ※ -9.999 ~ 99.999mm (User Setting)	
[05]	Span Height Setting		
[06]	Tank Height Setting		
[07]	Auto Set	Yes: Execution, No: Non-execution	Quick Menu
[08]	NAMUR NE43 Set	NAMUR NE43 function setting and holding	
[10]	Damping Time Setting	0 ~ 10 sec. (Default 0.5 sec. @ 0.5 sec. Step ADJ.)	
[30]	Rotation Interval Setting	0.5 ~ 10 sec. (Default 1 sec @ 0.5 sec Step ADJ.)	
[31]	'mA' Display On/Off	Display 'mA' on/off at rotation mode	
[32]	'%' Display On/Off	Display '%' on/off at rotation mode	
[33]	'Meter' Display On/Off	Display 'M' on/off at rotation mode	
[34]	'Feet' Display On/Off	Display 'ft' on/off at rotation mode	
[40]	Output Current "4mA"	Output "4mA" current for 5 seconds	Quick Menu
	Output Current "12mA"	Output "12mA" current for 5 seconds	
	Output Current "20mA"	Output "20mA" current for 5 seconds	
[90]	Show Error Number	Display configuration number of error	
[91]	Show Voltage Value	Display the zero, span, current voltage of sensor	
[99]	Firm Ware Version	Display of firm Ware Version	
[100]	Reset	Reset to previously saved setting	

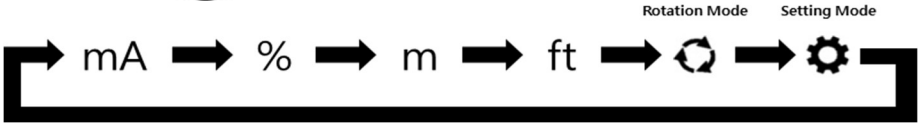
[Table 2] Setting Menu List

4. Setting and Operating



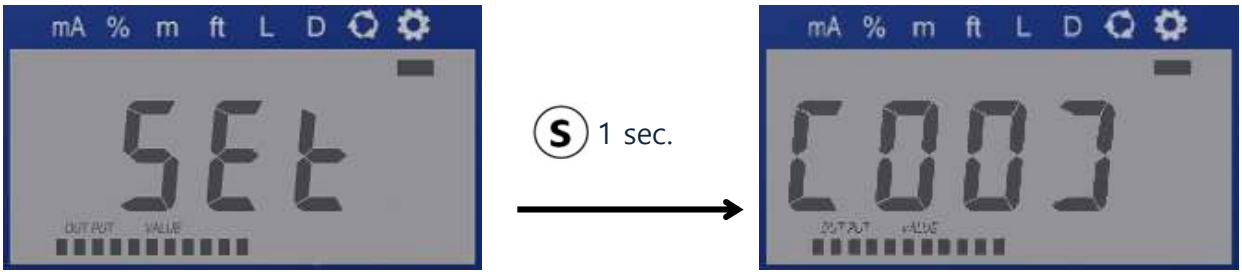
Display Mode	
mA	mA Mode
%	Percent Mode
m	Meter Mode
ft	Feet Mode
L	Level (User Setting)
D	Distance (User Setting)
↻	Rotation Mode
⚙	Setting Mode

Whenever (M) button is pressed, Display Mode is switched sequentially.



※ Rotation mode (↻) show each display mode automatically at interval of 1 second by default. It can be set up to 10 second at intervals of 0.5 seconds.

☐ How to enter to Setting Manu



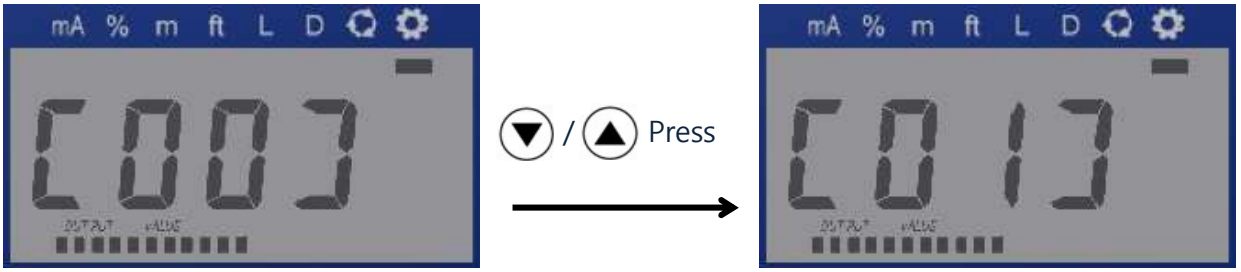
Press (M) button until the cursor is located to **Setting Mode** (⚙) and Press (S) button for 1 second to enter **Setting Menu** (flickering: Green LED)

☐ How to return to Setting Mode



Press (M) button for 1 second to exit to **Setting Mode** (⚙). (flickering : Green LED)

☐ How to select the Setting Menu



Each **Setting Menu** can be switched by usage of arrow (▼/▲) buttons.

Press (S) button for 1 second to set of each function referring of below table.

☐ How to change the setting value

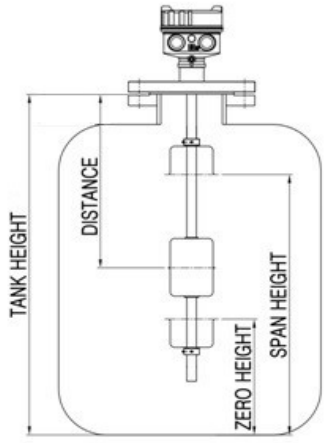


"Flickering only one Digit": It is available to shift to the other digit.
"Flickering all of Digit": It is available to change the setting value within flickering digit.

Key Button	Function
Press (▲) for more than 1 sec	Shift to the other digit
Press (▼) for more than 1 sec	Shift to the other digit
Press (▲) for less than 1 sec	Chang the value
Press (▼) for less than 1 sec	Chang the value
Press (M) for more than 1 sec	Exit without saving
Press (S) for more than 1 sec	Exit after saving

[Table 3] Key Button Guidance

■ Definition of Height



▶ **Zero Height**

From bottom of tank to center of float at zero position

▶ **Span Height:**

From bottom of tank to center of float at span position.

▶ **Tank Height**

From bottom of tank to highest level of medium in the tank.

▶ **Distance**

From top of tank to center of float.

■ Zero, Span Setting

☐ Zero



- When the measurement is in the Zero position.
- In setting mode, enter item 02.
- Set the Zero value and press the (S) button for about 1 second to save.

☐ Span



- When the measurement is in the Span position.
- In setting mode, enter item 03.
- Set the Span value and press the (S) button for about 1 second to save.

■ Offset

☐ mA



- In setting mode, enter item 11.
- Set the current value and press the (S) button for about 1 second to save.

☐ %



- In setting mode, enter item 12.
- Set the current value and press th(S) button for about 1 second to save.

☐ mm



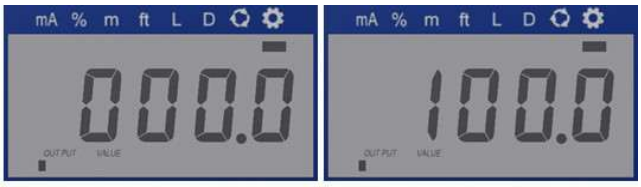
- In setting mode, enter item 13.
- Set the current value and press the (S) button for about 1 second to save.

■ Zero, Span Quick Setting

☐ Setting Screen



mA Setting



Percent Setting

※ The default unit is set to "%".

☐ Zero Setting

No.	Contents	Quick Menu Setting
[02]	Zero Setting	▼ Press for 1 sec. → input the value → S Press for 1sec.

☐ Span Setting

No.	Contents	Quick Menu Setting
[02]	Span Setting	▲ Press for 1 sec. → input the value → S Press for 1sec.

※ Span setting when the level are more than 50%.

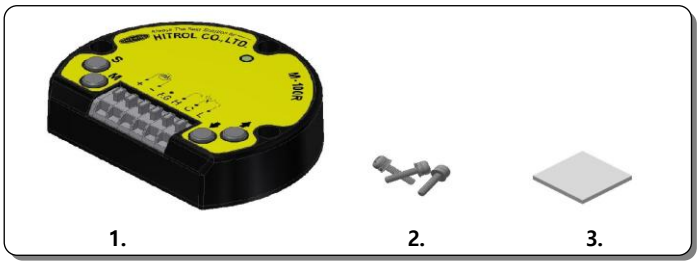
☐ Others

- ▶ Zero & Span can be set regardless of display mode status
- ▶ It can set, save, and cancel the values. (Refer to Table 3)
- ▶ The level shall not be changed when Zero & Span are setting.

APPENDIX L

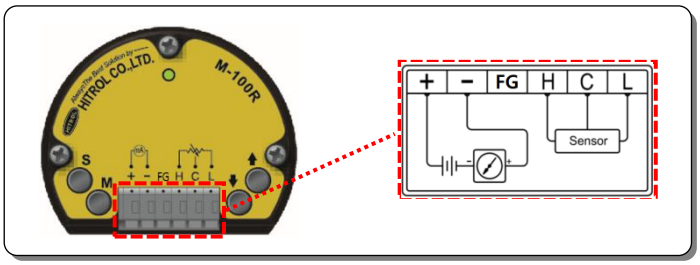
User Manual for M-100R

1. Basic Components (It is applied when M-100R is supplied individually.)



1. M-100R
2. SEMS Bolt M3 x 14L 304SS
3. 3M VHB Strong Double Tape (2.54cm x 2.54cm)

2. Wiring Diagram



▷ +, - : DC +24V (DC 2-wire 4~20mA Loop)

▷ FG : Frame Ground

▷ H.C.L : Terminal for Sensor Wiring

3. Setting

■ ZERO/SPAN Setting

Step. 1



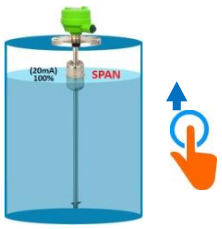
When power is connected, Green LED is ON.

Step. 2



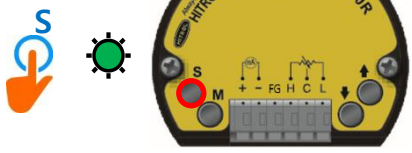
Place a float at 0% position and press ⓓ button on the M-100R (R/I Converter).

Step. 3



Place a float at 100% position and press ⓤ button on the M-100R (R/I Converter).

Step. 4



Press Ⓢ button for about 1 second until the Green LED is flickering. Then, Zero / Span will be set simultaneously.

▷ The order of Step. 2 and Step. 3 can be changed.

▷ Zero(0%) can be set individually as Step. 1 → Step. 2 → Step. 4 in order.

▷ Span(100%) can be set individually as Step. 1 → Step. 3 → Step. 4 in order.

※ Caution: If wrong setting, Yellow LED will be flickering and 3.6mA current will be out.

■ Auto Setting (Applied to HT-100R Series Only.)

In case the M-100R to be replaced without separation of the sensor from the tank, set it as below.



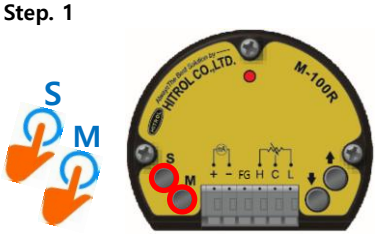
Press Ⓢ+Ⓜ+ⓓ+ⓤ buttons at once for about 1 second until Green LED is flickering. Then, Zero/Span will be set automatically.

▷ It is recommended to set Zero/Span during the maintenance period of the tank.

■ Offset

Adjust as below when fine adjustment is required or there is an error of the measuring device.

Step. 1



Press Ⓢ+ Ⓜ buttons at once for about 1 second until the Red LED is ON.

Step. 2

▷Span◁



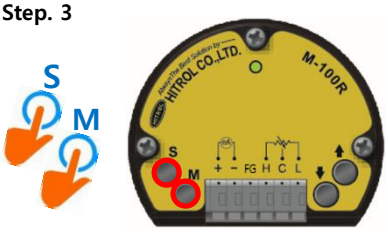
Hold down Ⓢ button and adjust a current output finely using ⏬/⏫ button.

▷Zero◁



Hold down Ⓜ button and adjust a current output finely using ⏬/⏫ button.

Step. 3



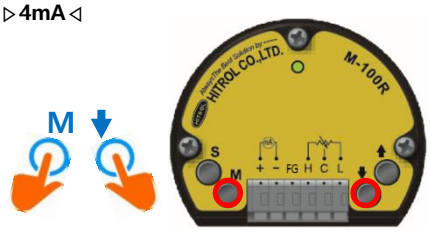
Press Ⓢ+ Ⓜ buttons at once for about 1 second until the Green LED is ON. Then, offset is completed.

▷ **Offset adjustment can be carried out regardless of float position.**

■ Simulation Current Out

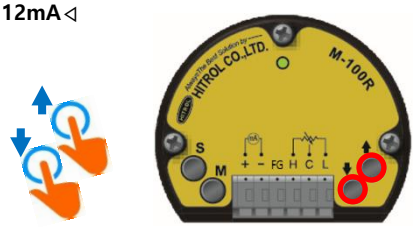
When the check of correct output (4~20mA) between M-100R and PLC required, test it as below.

▷4mA◁



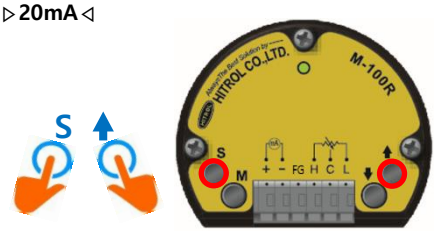
Press Ⓜ + ⏬ buttons at once for about 1 second then 4mA will be out for 5 seconds.

▷12mA◁



Press ⏬ + ⏫ buttons at once for about 1 second then 12mA will be out for 5 seconds.

▷20mA◁



Press Ⓢ + ⏫ buttons at once for about 1 second then 20mA will be out for 5 seconds.

▷ **After 5 seconds, it will be returned to actual float sensing mode.**

▷ **It can be tested regardless of the wiring of the sensor.**

4. Cautions ⚠ WARNING

▷ **When wiring of power supply, +, - shall be wired correctly.**

▷ **Power source shall be between DC +17V~+40V.**

▷ **Wiring shall not be carried out when the power is on.**